WWF INDIA

PANDA

January 2026

Coexistence Culture

India's national animal is an enduring symbol in the country's traditional artforms.

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Sustainable Straws

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Celebrating

20 years

8.30pm | 28th March

The world's largest grassroots movement for the environment turns 20 this year. Join millions in India and around the planet for a grand celebration.

60 EARTH HOUR

WWF

CONTENTS

EDITORS' NOTE

As we go about building our world at breakneck speed, it is easy to overlook the little worlds that share our planet. Consider the multitude of butterflies that flit between mud puddles for nutrition and reflect the loss of habitat connectivity—if we look closely enough (*pg. 04-05*). And look, we must. Because nature is constantly giving us signs.

The planet just saw its biggest coral bleaching event yet. With 84% of reefs affected, climate change is robbing our world of its life and colour. Given that coral reefs support nearly a billion humans, let's dive deeper into the causes and look for solutions (*pg. 11*). Incredible things can happen when we pay attention. The biodiversity recorded by citizen scientists during City Nature Challenge 2025 shows that the way forward may be for scientists and citizens to work together (*pg. 03*). Plastic is a case in point. A technological initiative is helping WWF-India detect marine plastic debris with satellite images in Goa and Odisha (*pg. 07*), while a group of women in Tamil Nadu is making sustainable straws out of fallen coconut leaves (*pg. 13*).

With this philosophy of collective effort, WWF-India supports grassroots organizations working for species and ecosystems that often fly under the radar (*pg. 10*). After all, there are still so many species that we know little about. While the tiger has been an integral part of India's story for centuries (*pg. 08-09*), we are yet to gather enough information about the 11 small cat species found in the country (*pg. 14*) or the 24 dancing frog species endemic to the Western Ghats (*pg. 17*).

Our world and theirs may seem far apart, but our fates are intertwined. Anything we do impacts the biodiversity on this planet, and each one of these species plays an important role in maintaining the ecological balance of our one shared home. This edition of Panda is an ode to some of the unsung heroes of our ecosystems, acknowledging their critical contributions and paving the way for a more mindful way of coexistence on our part.

— Sumeet Keswani & Kaveri Jain

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grand theft ants

Raids of the Queenless Colony

1

In most ant colonies, the queen stands out due to her size and/or wings. But in this ant colony, something is off. Every female ant looks... *exactly* the same.

2

This is the *Diacamma indicum*. All females are born with a thoracic gland. But only one reproduces, taking control as the gamergate. She retains her position by mutilating the thoracic gland of newborns.

3

The mutilated females take up roles like caring for offsprings, defending the nest and foraging for food.

4

A foraging female worker sometimes stumbles upon a relocating colony of the same species. She sees an opportunity.

5

She sneaks in to kidnap the moving ants' unguarded pupae. She prefers the pupa over an egg or larva as that is the last developmental stage before adulthood. This raid can be solitary or in a group.

6

The most successful raiding ants don't linger. They pick up an unguarded pupa and make a quick exit before an ant of the victim nest notices.

7

With the pupa secured, the ant transports it back to her own nest.

8

The stolen pupa is cleaned and cared for by the colony like one of their own until it emerges as an adult and becomes a worker ant.

9

If it turns out to be female, its thoracic gland is most likely mutilated by the gamergate. These ants of the *Diacamma* genus, known to remain permanently queenless, exhibit rare brood theft behaviour and help us in understanding alternative social structures in ant colonies.

Illustration: Neha Upadhyay

ALL EYES ON NATURE

With entry barriers lower than ever before, citizen science has made conservation a dialogue between researchers and the community. The recent City Nature Challenge shows that the way forward is together.

By Shonali Chenzira,
Senior Manager—Science & Nature Education, WWF-India

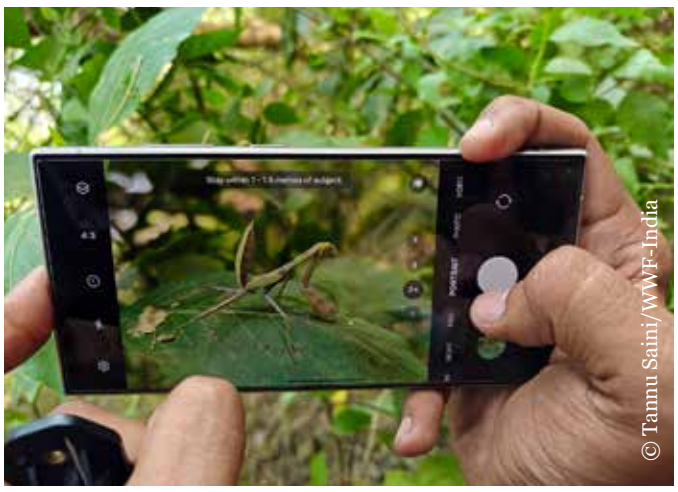
A quiet but powerful movement is growing across India. From the bustling streets of Hyderabad to the backwaters of Kerala, the mangroves of Goa and the rainforests of Assam, something extraordinary unfolded in April 2025. Science was no longer confined to laboratories or chambers of academia; it flourished on sidewalks and in schoolyards, balconies and parks.

Indians took to the City Nature Challenge (CNC) in large numbers, joining people from 61 other countries who 'blitzed' their observations of nature. A bio-blitz, or blitz in short, is a competitive form of engagement in which individuals, communities, cities or countries compete for rankings (highest observations, most species diversity) by recording sightings of wildlife on citizen-science platforms.

City Nature Challenge

This global competition to document urban biodiversity originated as a friendly challenge between Los Angeles and San Francisco in 2016. Nine years on, the annual challenge held last April saw participation from 669 cities. Around the world, 105,596 observers made a total of 3.25 million observations in just four days. A whopping 73,403 species were documented in the process.

India's contributions spanned 75 cities, with individuals, groups, organizations and schools taking part. WWF-India was a core organiser in Assam, Bengaluru, Bhopal, Coimbatore, Delhi-NCR, Eluru, Goa, Hyderabad, Kerala and Mumbai. We mobilised participation through diverse outreach strategies, ranging from nature trails to field demonstrations with RWAs, schools workshops, forest department trainings and corporate employee engagement. Notable sightings included the elusive Purcell's hunter slug in Andhra Pradesh and the grey pansy butterfly in Delhi, where its last official public record dates back to 1984.



A citizen scientist documents a praying mantis in Delhi.

Science by the People, for the Planet

The beauty of citizen science is its radical inclusivity. The term broadly refers to the active involvement of non-professionals in any aspect of the scientific process—from data collection to framing research questions, analysis and long-term monitoring. Observations are data points that, once verified by a rigorous vetting process, feed a global open-source dataset and knowledge system. This helps decision-makers and informs conservation management planning, reporting and actions.

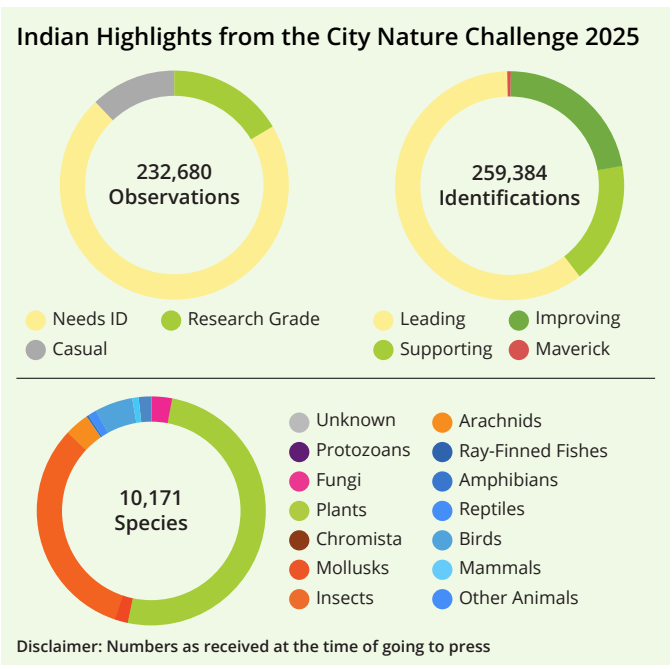
Some of the most insightful entries in CNC 2025 captured fungi in drains, insects in alleyways and grasses underfoot. The most documented organism worldwide was the humble dandelion (*Taraxacum officinale*). These citizen observations are a window into the lives of lesser-known species, demonstrating that even the ordinary is scientifically valuable.

Today, there's a growing notion that wilderness and biodiversity are elsewhere—far away, out of sight, in a national park. Humans have dammed and distanced nature, commodified it into clickbait packages that only serve to break the monotony of daily doomscrolling. But those who look with curiosity, listen with patience and observe with joy know that this is far from reality. While our earlier touchpoints might have disappeared, citizen science offers a way back to our lost intimacy with the natural world.

Learning about the bird singing by your window or sharing a familiarity with trees forges a sense of belongingness. This act of knowing establishes a kinship, which paves the way for long-term community stewardship.

Data Democracy

Conservation can be a dialogue between professionals and citizen scientists. Take, for example, the State of India's Birds (SoIB) report—a noteworthy collaboration of 13 organizations to analyse 30 million observations of birds from eBird checklists by 30,000 citizen scientists. The 2023 report revealed insights on the conservation status, habitat trends and threats of 942 Indian birds. With extremely low entry barriers, like a phone with a camera and an app, citizen science has the potential to enrich the culture of professional science. It challenges researchers to communicate more openly, design participatory projects and integrate diverse systems of knowledge, thus tackling traditional power structures.



From top: A melanistic jackal recorded in Madayipara, Kannur, in CNC 2025; CNC contributors at C.R.R College for Women, Eluru.

Of course, citizen science is not without its challenges. Ensuring data quality, long-term engagement, back-end vetting, protecting sensitive data and ethics are a few. But with thousands of citizen scientists uploading data daily, the scale of data collection that was impossible earlier is now within reach. Citizen science also expands coverage to remote and under-documented regions. By leveraging local knowledge and wide participation, conservation efforts can become more hyperlocal and responsive in real-time.

As environmental challenges become more complex and interconnected, approaches that are participatory and grounded in local realities are vital. Connection, not control, drives our understanding of the natural world. Science can and perhaps should be participatory, not prescriptive.

The Way Forward

It would be myopic to treat blitzes like CNC as one-off events. The journey does not end with the campaign. This is a template of shared knowledge, collaborative action and meaningful outcomes that can shape the future of science. While critical issues may be global, solutions can start in our own backyards.

With more awareness, partnerships and support, citizen science can and must evolve into a year-round phenomenon, integrated into school curricula and community activities in housing societies or embedded into corporate sustainability programmes.

We watch with joy as it snowballs, changing the narrative from one of loss to that of action. This movement is power—and it belongs to us all. ◆

THE BUTTERFLY EFFECT

A curious observation on an academic trip over two decades ago led a conservationist to embark on a lifelong journey of linking biodiversity health with habitat connectivity.

By Ratul Saha,
Director — Raptor Conservation Programme, WWF-India

The waterfall is just a little bit ahead," the forest guard said. The trail, which had been largely comfortable until then, suddenly turned steep. I took a break and looked around: a stream emerged from a narrow valley and passed through moss-laden boulders. The hills of the Western Ghats rose around us, their tops covered by dense, rain-bearing clouds. I was a research scholar leading a group of students from the Zoology Department at Presidency College, Kolkata, on a field excursion, and we were still hours away from our destination—the Brahmagiri peak in its eponymous wildlife sanctuary.

A flash of colours drew me to a muddy patch along the forest trail. On a patch of moss sat some vibrant butterflies. In my backpack, I had the perfect companion for this moment: *Butterflies of Peninsular India*. This guidebook helped me identify the diverse species in front of me, from the endemic Malabar banded peacock to the common mormon.


© Ratul Saha/WWF-India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The Hidden Science of Mud-Puddling

At first glance, it seemed like a random gathering. But as I watched more closely, I realised there was a purpose to their stillness. A group of eight students staring at butterflies made the forest staff suspicious. Perhaps they were concerned that we might collect them as specimens. "Ah, officer! I am just looking at the butterflies drinking water," I said, an explanation so unusual that it bought us some time.

But these butterflies were not simply drinking water. They were collecting nutrients of life from the mud. I realised this only later, after I had done some reading on the matter. Mud-puddling is a form of supplementary feeding in insects such as butterflies, similar to salt-licking in terrestrial animals. Adult butterflies feed on nectar but also puddle over various mineral-rich sources such as animal dung, carrion, rotting plant matter and mud to compensate for nutritional deficits experienced during their larval stage. They're even attracted to human sweat, due to the salts and sugars present in it.

The inorganic minerals gained from puddling, especially sodium, play a vital role in neuromuscular function and support the complex mechanics of butterfly flight. The sodium that males get from puddling, after excreting potassium, is transferred to females through spermatophores as a 'nuptial gift', which helps the females lay eggs.


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© Ratul Saha/WWF-India

Clockwise from top left: Butterflies mud-puddling near a pool to absorb essential minerals; a Thai white dragontail exhibiting mud-puddling behaviour—absorbing sodium and other essential minerals while excreting excess potassium; a red-base jezebel mud-puddling on moist soil; a common mormon basking in the sun.

Butterflies, Microhabitats and Landscape Policy

This experience made me realise how something as small and simple as a mud puddle could have a ripple effect through an entire ecosystem. The minerals gathered from the earth today would stay in the delicate wings of butterflies, supporting their movement and influencing their distribution and range for a long time. Butterflies are highly mobile but their movements are shaped—and often constrained—by the components of the landscape. They are grounded by necessity, seeking out environmental factors in habitats where resources align. Fragmented landscapes, polluted water sources and isolated green spaces can break essential links between suitable habitats, reducing the butterflies' ability to forage, find mates and reproduce. A single lost puddle may seem insignificant to the human eye, but when multiplied across a landscape, these small losses can undermine entire population dynamics.

Most plagioclimax habitats—areas altered by human activity—consist of many different microhabitats and microclimates. So, even subtle changes in vegetation can render an area suitable for one species and unsuitable for another while the habitat might appear unchanged to a casual observer.

This insight helped me crack my M.Phil. admission exam and has been the heartbeat of my professional career ever since, helping me eventually perform my dream role at WWF-India. For the past two decades, I've worked with communities, conservationists and policymakers to highlight how habitat quality, connectivity and suitability are critical aspects for biodiversity conservation and how butterflies are powerful indicators of environmental health.


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Clockwise from top left: A variable tawny rajah feeding on animal dung; common quaker butterflies feeding on elephant dung; the same species feeding on tiger scat; a lemon pansy attracted to human sweat.

Field Insights to Policy Imperative

Research and conservation actions initiated over the last two decades by WWF-India—in collaboration with the forest department—have established the Kallar Corridor as a crucial link connecting the elephant population of Brahmagiri Nilgiris–Eastern Ghats with the population of Nilambur–Silent Valley–Coimbatore. The elephants are known to use this corridor extensively due to availability of food like *Krishna Siris* (*Albizia amara*), *bidi* leaf tree (*Bauhinia racemose*), soap bark (*Acacia intsia*), *ber* (*Zizyphus* sp.) and wild lime tree (*Atalantia monophylla*)—and fruits like jackfruit, mango and tamarind. Apart from elephants, a total of 200 butterfly species have been recorded in this corridor. These butterflies not only signal a well-functioning corridor but also contribute to its biodiversity through pollination. Without them, the ecological health of the landscape would decline.

Integrating pollinator needs into land-use policy, habitat restoration frameworks and development plans is essential. Pollinators require a mosaic of habitats that provide continuous floral resources across seasons, safe nesting and roosting sites, and access to water and mineral sources. Reducing pesticide exposure, promoting native flowering plant diversity, and ensuring year-round foraging opportunities are critical to sustaining pollinator populations. By aligning landscape management with these requirements, policies can secure both pollinator health and the broader ecosystem services they sustain.

What began with a mud puddle, an inquisitive pause and a delicate flight of butterflies has led me from studying their role in landscape connectivity as a student entomologist to now leading a raptor conservation programme—still driven by that same deep fascination with ecosystems and the habitats that sustain them. ⬥

LIVING IN TIDE COUNTRY

Intensifying cyclones and saltwater flooding pose a threat to traditional livelihoods in the Sundarbans. WWF-India has introduced multiple innovations to make fish farming more resilient.

By Soma Saha, Lead—Communities; Arjun Kumar Manna, Project Officer; Anamitra Anurag Danda, Director—Sundarbans Delta Programme, WWF-India

Life in the Sundarbans has to adapt to the landscape and its unique challenges. The average elevation of the villages is just a few metres above sea level, while the high-tide levels are six metres or more. For villages to exist in the region, earthen embankments had to be erected to keep saltwater at bay. The current embankment length is nearly 1,800 kilometres, but these embankments get breached often. With storms becoming more severe and frequent, breaches have also increased.

A breached embankment results in saltwater flooding of villages twice a day—until the breach is mended. The villages depend mainly on paddy agriculture, followed by fishing and inland fishery. The Bengali palate prefers freshwater fish, therefore household-level fisheries are freshwater ponds. These ponds also remain susceptible to saltwater flooding and the loss of fish crop.

We witnessed the first large-scale saltwater flooding in the aftermath of cyclone Aila in 2009. Dead fish floated everywhere, turning the air fetid. This image has lingered in our collective memory since. WWF-India has tried to address the vulnerability of fish ponds on several occasions.

The first attempt was to encourage the cultivation of euryhaline fish, which can withstand a sudden rise in salinity, e.g. the spotted scat (*Scatophagus argus*) and the Asian seabass (*Lates calcarifer*). The idea was that even if saltwater reaches the ponds, the fish crop would not perish. This did not work because the Asian seabass is a carnivore that preys on other fish, and the Bengali palate did not favour the spotted scat.

Due to repeated cyclonic events in the region, many disaster shelters were built by various government agencies and non-state entities. Initially, the focus was solely on saving human lives. Subsequently, disaster shelters also started to incorporate the needs of livestock, but not the fish in the ponds.

The second attempt at resilient fish farming was to build a fish disaster centre. The idea was to create a secure facility owned and operated by the community that would allow for high-density stocking of fish for a limited period as soon as a cyclone warning was issued. The facility was essentially a set of large, uncovered water tanks on high ground with solar-powered aerators and pumps. It was set up in 2022 in consultation with the Gram Panchayat leadership after nearly 30 fish farmers expressed their intent to use the facility. However, due to local sociopolitical issues, the facility was never used and wasted away.

The third attempt was a floating fish farm in a creek. This was inspired by an ongoing experiment of the West Bengal University of Animal and Fishery Sciences (WBUAFS). The experimental fish farm had survived cyclones in a relatively sheltered creek in the Sundarbans during 2019-2021. Since it was a scientific experiment, the people working on the farm were paid labourers. We worked for a year to identify a group of fish farmers who wanted to participate in our intervention and were located close to a creek with enough draft even during low tide. By late 2023, we found a group that constituted itself as the Daspur Cage Fishery Committee (DCFC)—duly endorsed by the local Gram Panchayat at G-Plot. WBUAFS came onboard as the knowledge partner and provided training to the DCFC members—and all others who were interested.

A floating fish farm is essentially a set of floating structures with nets. The installation is anchored to the creek bed. Fish fingerlings are introduced to the first fish cage and subsequently moved to the next, as some of the fishes grow faster than the others. DCFC members decided on Asian seabass since it is a relatively high-value fish. During the festive season, its price can go up to Rs. 700 per kilogram, while at other times, it sells for about Rs. 300.

G-Plot is one of the southernmost islands in the Sundarbans. Here, the creeks are wide and choppy—much like a fast-flowing river that changes direction twice a day. Despite the challenges, the DCFC members not only persisted but also innovated. We had provided them with octagonal marine-grade stainless steel structures, but they created a low-cost fish cage out of bamboo. This bamboo structure is rectangular, experiences less drag and is easier to operate. The nets need to be changed every fortnight due to biofouling. Changing nets of a floating rectangular structure is relatively easier than that of an octagonal structure. The nets are reused after drying and cleaning.

After a couple of missteps and loss of fingerlings, DCFC was able to stabilise operations by October 2024 and harvested the first batch in March 2025. The carnivorous nature of Asian seabass worked in our favour here. They were not provided any external feed—the creek brought enough live fish into the cage.

While DCFC has proven that fish cages are resilient to weather conditions, the fish farmers must manage their operations in a manner that their harvests coincide with festive times—when the demand is high. The committee now plans to modify the octagonal cages into rectangular ones, while also tweaking their practice to make the enterprise more financially viable for the future. ◆

From left: Low-cost fish cages made out of bamboo by fishers in the Sundarbans; the Daspur Cage Fishery Committee stabilised operations by October 2024 and harvested the first batch of Asian seabass in March 2025.

07

SAFE PERCHES FOR RAPTORS

A simple infrastructure modification is saving scavengers from electrocution in Dehradun, Uttarakhand.

By Rinkita Gurav
Manager—Raptor Conservation Programme, WWF-India

When WWF-India first observed the scavenging raptors at Langha Road in Dehradun, it found an alarming pattern of bird deaths. The threat was hiding in plain sight.

The local butcher community discarded animal carcasses—over 60 per week—in a dedicated area close to the Sheetla River. This informal practice had long sustained scavengers in the region, but it now posed a hazard. A 33kV single-circuit distribution line ran for 10 kilometres along the river, with minimal tree canopy nearby for the birds to roost. The powerline poles and pylons were the tallest structures around and thus became natural perching sites for large-bodied raptors like the Himalayan vulture and steppe eagle. But the birds' large wingspans spanning five to nine feet could easily bridge the gap between two live wires, completing the circuit and resulting in electrocution.

WWF-India began monitoring raptors at the site in 2022, and by March 2025, it recorded 30 bird deaths during winters alone. The Himalayan Institute for Sustainable Environment and Research (HISER) Society had recorded more than 130 raptor deaths by electrocution along a four-kilometre stretch of powerlines at Langha Road between 2014 and 2019. WWF-India facilitated discussions among key stakeholders with photographic evidence and field data. A committee was constituted under the leadership of the Divisional Forest Officer, Kalsi, and included representatives from Chhabra Zila Panchayat, Uttarakhand Power Corporation Limited (UPCL) and Power Transmission Corporation of Uttarakhand Limited (PTCUL).

The group deliberated on the feasibility of various interventions like relocating the carcass disposal site, installing artificial perches and insulating powerlines. The last one turned out to be the most practical solution. UPCL replaced five kilometres of exposed distribution lines with insulated cables, aiming to reduce electrocutions in the most dangerous section. With a project cost of around INR 2 crore, the initiative represented not only a strong commitment to conservation but also an operational safeguard. Besides killing birds, electrocution events led to power outages. "The electricity department was suffering heavy financial losses. If the power went out for just 15 minutes, we lost about 750 units. That's roughly ₹5,500 lost each time. Tripping occurred 8-10 times a day, causing losses of several lakhs annually," said Mr. Vikas Bharti, Subdivision Officer, UPCL. "After insulating the powerlines, not a single tripping occurred in six months."

Langha Road's story is rooted in a broader socio-ecological context. The decades-long practice of carcass disposal at the site has helped prevent disease outbreaks, generated livelihoods, supported scavenging raptor populations and maintained ecological balance. Without timely intervention, however, the linear infrastructure intersecting this system threatened to sever an ancient thread of coexistence. This case sets a precedent for integrating conservation principles into local infrastructure planning. Sometimes, conservation is not about halting development but reshaping it to accommodate all those who share the land—and indeed, the sky. ◆

The area around the Langha Road carcass disposal site is frequented by 24 raptor species, including endangered ones like the Himalayan vulture, Egyptian vulture and steppe eagle.

PLASTIC SPOTTING

Pilot programmes in Odisha and Goa show how remote sensing can help us fight marine pollution.

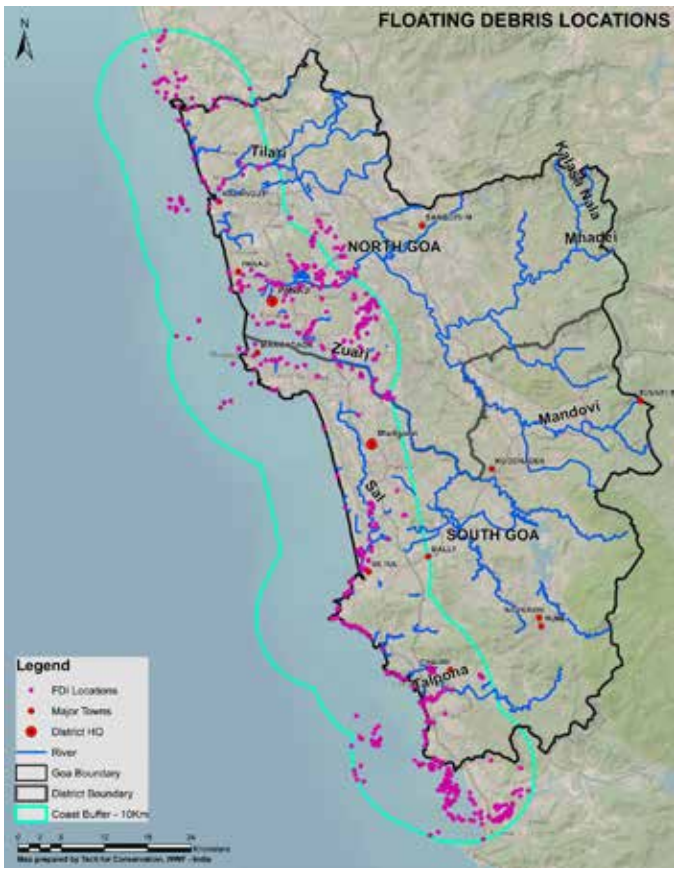
By Laghima Sharma
Assistant Manager—Communications, WWF-India

Plastic waste is not a problem confined to land. A widely-cited *Science* study states that an estimated eight million tonnes of plastic waste enters the oceans every year. Floating plastic debris is constantly on the move, driven by tides, winds and seasonal river flows. This makes it difficult to detect, quantify and track.

WWF-India recognised the scale and complexity of this challenge and decided to assess the problem with the help of technology. Supported by Automation Anywhere, Centre for Wildlife Studies and Ashraya Hastha Trust, WWF-India's Tech for Conservation programme initiated a pilot project in Odisha and Goa in 2024 to detect and measure marine plastic pollution using satellite remote sensing studies. It used high-resolution imagery from the Sentinel-2 mission of the European Copernicus Programme—and advanced spectral analysis—to detect floating debris from space. A variety of tools and algorithms were used to distinguish plastics from natural materials based on their unique spectral signatures. This study revealed a few significant patterns. One of the key findings was the impact of seasonal changes on marine pollution. The districts of Ganjam and Puri in Odisha had their highest concentrations of marine plastic waste in June 2024. Heavy rainfall and runoff had flushed large volumes of inland plastic waste into the sea during peak monsoon. Similarly, the accumulation of plastic debris in the offshore waters of Goa was lowest in March 2025, as human activity reduced after tourist season. These findings are crucial for planning targeted clean-up operations.

The study also shed light on the spatial and temporal dynamics of marine debris, identifying the primary sources of floating waste. In Odisha, inland waste was found to enter the Bay of Bengal primarily through the Mahanadi and Chilika rivers. In Goa, the Mandovi, Zuari and Talpona rivers were identified as major offshore polluters. These findings highlight the importance of monitoring riverine inputs to combat marine plastic pollution.

While traditional methods of detecting plastic debris are often limited by cost and coverage, remote sensing enables real-time, large-scale monitoring without intensive fieldwork. This methodology is scalable and can also be replicated globally, forming the basis for future innovations using machine learning in environmental monitoring. ◆



From left: A close-up photograph of a plastic aggregation hotspot; a map showing the hotspots of the floating index along Goa's coast.

TIGER TALES OF INDIA

The tiger has held an important place in Indian art, culture and mythos for centuries. It has been variously associated with beauty, power and bravery. From ancient cave art to folktales, dance, architecture and tribal paintings, we have celebrated the striped big cat in diverse ways. These cultural artefacts throw light on a traditional tether of coexistence.

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PULIKALI, KERALA

Pulikali, also known as Tiger Dance, is a vibrant folk art form celebrated during the Onam festival in Thrissur. Artists use body paint and face masks to resemble tigers and cheetahs, and dance to the rhythm of traditional percussion instruments. Performers, called Pulikalikkar, undergo special training to dance in the guise of animals, and some troupes fast for 41 days before the day.[1]

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HULIVESHA, KARNATAKA

Hulivesha is a traditional folk art of the Tulu Nadu region. It is performed with local variations during Navratri, but most versions feature performers dressing up as tigers and dancing to drums in a procession. While origin stories are diverse, most suggest that the dance aims to appease animal spirits and protect livestock and crops. The tiger is also revered as the mount of Goddess Durga.[2]

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BRONZE TIGERS, KARNATAKA

There are eight bronze tigers installed on pedestals in the Mysuru Palace. They were commissioned by Maharaja Nalwadi Krishnaraja Wodeyar in 1905 and sculpted by British artist Robert William Colton over the next few years. These bronze sculptures are placed around the palace grounds in pairs, three of them appearing to guard pathways radiating out of the palace.[3]

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TIGER CAVE, TAMIL NADU

The Tiger Cave is a rock-cut temple complex in the ancient town of Mahabalipuram. Built by the Pallava dynasty and considered an exemplar of Dravidian architecture, the complex is a UNESCO World Heritage Site. It gets its name from the majestic tiger heads carved around its entrance, a precursor to the walls inside that hold numerous intricate carvings and sculptures of scenes from Hindu mythology. Inside the complex, there are 11 rock-cut sculptures of tiger heads set around a pavilion—a seat from which the Pallava kings addressed audiences. The rock carvings not only showcase the skill of the sculptors but also establish the tiger as an icon of power and royalty going back to the 7th century AD.[4]

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GOND ART, MADHYA PRADESH

The Gond tribe of Madhya Pradesh shares a close relationship with nature, and its art depicts this with intricate natural elements. A recurring motif is the tiger, since the tribe worships the big cat as a deity called *Bageshwar* and recognises it as the forest's protector.[5]

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WARLI ART, MAHARASHTRA

Much like the Gond tribe, the Warli tribe worships tigers as *Waghya dev*. Its art is characterised by lean stick-like figures and depicts the tribe's culture and beliefs, from festive occasions to harvest celebrations. Warli wall art exhibits the tribe's bond with nature and gratitude for its bounty.[5]

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CATALYST FOR CONSERVATION

WWF-India is empowering exceptional individuals and organizations working at the grassroots to conserve lesser-known species and ecosystems.

By Neha Sinha,
Head of Conservation Partnerships, WWF-India

On a cool day, ecologist Mitrajit Deb was observing a group of Phayre's langurs. It was a group of eight individuals—a male, females and juveniles—and they peered at him with their 'spectacled' eyes. The alpha male moved, and Mitrajit followed from a safe distance. For about 500 metres, the monkey led Mitrajit away while the rest of the troop vanished like smoke.

"That day, I learned of the strategic and protective behaviour of the male," Mitrajit says. Mitrajit has received WWF-India's Conservation Catalyst Programme (CCP) grant to study the Phayre's langur, or Phayre's leaf monkey (*Trachypithecus phayrei*), in Rowa Wildlife Sanctuary and adjoining areas in Tripura. The aim is to identify troops and understand their behaviour. So far, Mitrajit and his team have found two troops in Rowa. The animals range in the forest and occasionally visit people's gardens to pluck fruit and leaves. This necessitates devising strategies to reduce potential conflict and chart a course for langur conservation.

On another day, another sub-adult led the team away from his troop, taking them to a secluded spot before disappearing. "These monkeys are like invisible neighbours—people aren't aware of how rare these animals are. We find that the children of the village know Phayre's langurs, but they don't know their role in the forest."

With bluish-grey bodies, spectacle-like marks around their eyes, tufts of hair at the crests of their heads and babies that are bright orange in colour, Phayre's langurs may be the most endearing monkeys you see. They are also categorised as Endangered in the IUCN Red List of Threatened Species. Once ranging over larger parts of Asia, today they are found only in Bangladesh, Myanmar and India—Mizoram, Assam (mainly the Barak valley) and Tripura.

This animal needs good forest cover and relishes bamboo shoots, particularly in the monsoons. But it remains a lesser-known species and is threatened by land-use change, forest fragmentation and conflict with people. Studies in Satchari National Park, Bangladesh, by Naher et al. (2021) have found that leaves comprise 50% of its food, followed by fruits, flowers, buds and bamboo shoots. Feeding is the most important activity in its schedule, followed by travelling. Very little is known about the Phayre's langur in India. Through the CCP grant, we are attempting to find out more.


© Mitrajit Deb

CCP grant awardee Mitrajit Deb's team conducts a survey for Phayre's langurs in Rowa Wildlife Sanctuary, Tripura.

In Nagaland, towards the northeast of Tripura, another CCP grantee, Thangsoi M. Khiamniungan, is working to safeguard the habitat of the Western hoolock gibbon (*Hoolock hoolock*). Gibbons are classified as apes, so they are like cousins to us. Gibbons prefer continuous forest cover and spend most of their lives on trees. Behavioural studies have found that a majority of their time is spent in movement and feeding. And most of that movement is through brachiation—swinging from branches. This makes forest cover crucial for gibbons.

Thangsoi's work focusses on restoring habitat patches with the consent of the local people in the Khelia community forest of Noklak district, Nagaland. Noklak is on the Indo-Myanmar border and contains a remnant of the gibbon population in the Naga-Myanmar belt. Thangsoi has worked with the community and youth groups to secure


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Camera traps in the Khelia community forest of Nagaland have recorded clouded leopards.

abandoned *jhum* lands (tracts used for shifting cultivation) for reforestation. The team is also working to increase the stewardship of the community for the gibbons. In a recent resolution, the Choklangan Students' Union declared the preservation of the Western hoolock gibbon as a community priority, suggesting fines for violations. Three gibbons have been found in the Khelia area as well as in the neighbouring village of Wui. The secrets of this biodiversity hotspot are slowly coming to light now—the golden cat, the clouded leopard and the wild dog have come up on camera traps. "The biggest thing we have achieved is that the community is doing this together," Thangsoi says.

Other CCP grantees are working on a range of projects and geographies: the Human and Environment Alliance League (HEAL) works on carnivore conservation in Purulia, West Bengal, and has established a community goat bank for reducing human-wildlife conflict; Wanmei Konyak works on community-led conservation in Nagaland; the Wildlife Information and Nature Guide Society (WINGS) works on Indian wolf conservation in Paschim Bardhaman in West Bengal; Chinmay Sawant works on wolves in Kiraksal, Maharashtra; Gramya works on the sustainable management of *bugyals* (meadows) in the Kedarnath Wildlife Sanctuary; and Jan Jagruti works on conserving forests in Panchayat areas in Andhra Pradesh.

WWF-India received 240 applications for its 2025-26 CCP grant and chose seven grantees. Through the CCP, WWF-India is spotlighting exceptional individuals and organizations working to conserve neglected species and lesser-known ecosystems. Apart from providing financial assistance, the CCP team also works to build the capacity of the grantees for raising funds, writing successful proposals and creating robust project designs. ◆


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The Phayre's langur is threatened by land-use change, forest fragmentation and conflict with people.

#NoFilter: Global Warming Could Kill Coral Reefs

Coral reefs are regarded as the rainforests of the seas, supporting one-third of all marine species and nearly a billion humans. Are we prepared to lose them?

Coral Bleaching — now

When exposed to heat, corals expel the colourful, energy-producing algae that live inside them and turn white. Corals can regain their algae if conditions return to normal quickly, but prolonged heatwaves can lead to coral death.

2024 was the hottest on record, leading to record-breaking ocean temperatures and **three times more marine heatwaves**.

Action Required — now

- Reduce greenhouse gas emissions to address the root cause of ocean warming and acidification.
- Establish Other Effective Area-Based Conservation Measures (OECMs) in addition to Marine Protected Areas (MPAs) for protecting India's coral reefs.
- Reduce effluents entering the sea. Limit nutrient, sediment and pollutant runoff to improve water quality.
- Identify thermally tolerant coral genera and use these resilient species in active restoration projects.

Alert — 6 mo ago

From **January 2023 to March 2025**, the worst coral bleaching event ever recorded impacted **84% of the world's reefs.**

Sources: International Coral Reef Initiative, DownToEarth

12 FROM THE ARCHIVES

BRINGING CONSERVATIONISTS TOGETHER

Nearly five decades ago, WWF-India created avenues for nature enthusiasts to connect with one another and make an impact together. The ripple effects of those connections can still be felt today.

WWF LAUNCHES NATURE CLUBS OF INDIA

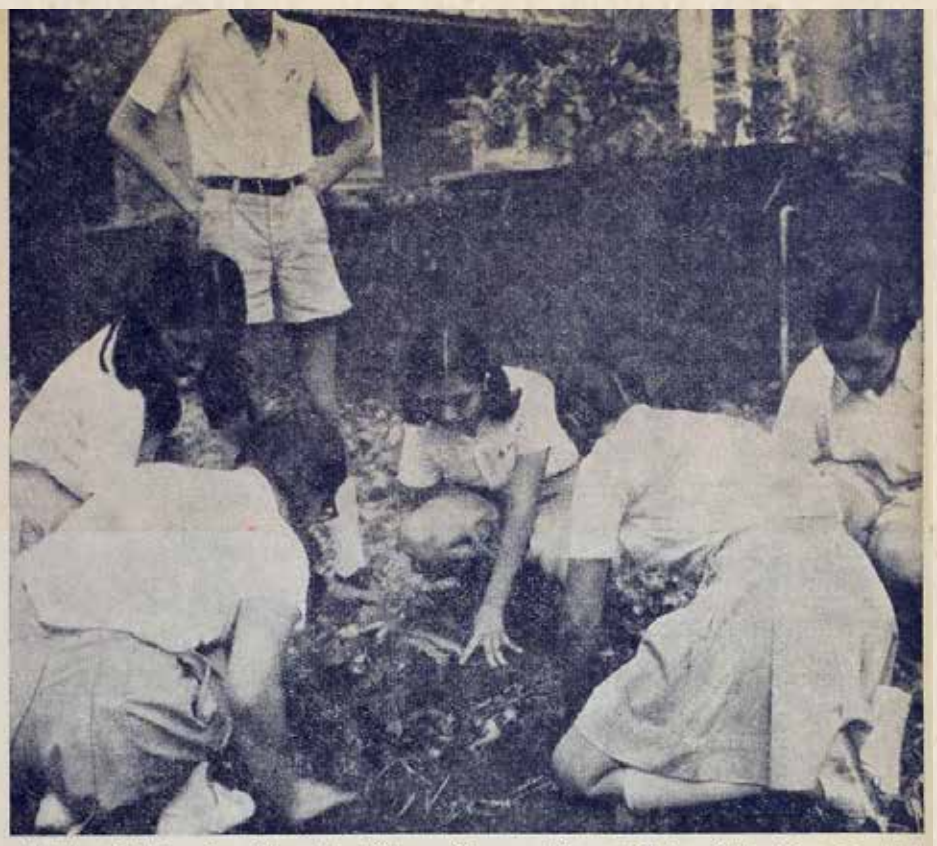
World Wildlife Fund-India's ambitious youth movement, the Nature Clubs of India, was launched on 1st July, 1976.

Already tremendous enthusiasm has been shown by principals, parents, teachers and school children themselves. At the time of going to press, more than 75 clubs have already been registered and many more are in the process of being formed.

The Nature Club movement will provide a useful complement to school studies in Geography, Science, Biology and Nature Studies—making these subjects more interesting, more integrated and more meaningful for the children.

School children between the ages of 10 and 16 years, in schools and housing societies, may form Nature Clubs. Each Nature Club must have a minimum of 15 children. One set of material will be sent for every 15 children. The registration fee for each child is Rs. 2/- per year and each club pays a *one time* registration fee of Rs. 10/-. WWF-India has planned a very interesting programme for the Nature Clubs. Nature Clubs will receive the following material:

- *Club Handbook* containing information for children to undertake mini 'do-it-yourself' projects.
- A fully illustrated *Nature Club Magazine* published on a quarterly basis.
- Illustrated *Feature Articles* on nature subjects to form a Club Encyclopaedia.
- Interesting wildlife and nature charts from time to time.



A Nature Club in action. When the children of the newly-formed Nature Club of New Era high school, Bombay, learned that a 50-year old tree was destroyed in the recent cyclonic storm in Bombay—they organised themselves and planted over 25 trees in its place. WWF-India (Western Region) helped the children obtain saplings and implements from the municipal corporation.

In addition to printed material, a series of very interesting slide talks on wildlife and nature are being produced and can be borrowed by Nature Clubs. From time to time, selected children from Nature Clubs will be taken on field outings and nature orientation camps.

As this programme is being launched on a pilot basis in Maharashtra and Gujarat, all literature and material will be available initially only in 3 languages: English, Marathi and Gujarati. Nature Clubs outside Maharashtra and Gujarat will only be entitled to literature.

WWF-India has received several very inspiring messages of encouragement and support from eminent educationists and leaders (see following box).

The Nature Clubs of India movement promises to grow strong in the years to come and hopefully India will soon have a younger generation firmly committed to its rich natural heritage.

Principals, teachers, parents and school children who are interested may send a self addressed envelope and write in for the attractive NCI information folder, to: The Education Officer, World Wildlife Fund-India, c/o BNHS, Hornbill House, Museum Compound, Bombay 400 023.

Pen Pals Corner

Owing to numerous requests from our readers, we have decided to start a Pen Pals column in the WWF-India Newsletter. This is to encourage our subscribers to correspond and exchange views with others interested in conservation, wildlife, bird-watching, nature, etc. In this issue we give below names of readers who would like pen-friends. All you have to do to get your name printed in this column is:

- Send us your full name, address, age, specific or general interests (e.g. 'bird-watching', 'collecting wild life stamps', 'camping', etc.), and
- Send us Re. 1 worth of postage stamps for each name you would like entered.

Ms. Venzina Noronha (22), "Veneziana", 1st floor, 91-B, Prof. Almeida Road, Bandra, Bombay 400 050. Interests : Bird-watching, stamp collecting, painting.

Mr. Vijay Dev Dabas (21), 13/2, Shakti Nagar, Delhi 110 007. Interests : Natural history, stamp collecting, general knowledge.

Mr. Dodo Bhujwala (17), 'Fair Lawn', Maharshi Karve Road, 3rd floor, Bombay 400 020. Interests : Wildlife conservation, nature outings music, and reading.

ECHOES OF HISTORY

Environment Education was the launchpad for WWF in India in 1969. But it was in July 1976 that it spread through the country with its Nature Clubs of India (NCI) initiative, as seen in this historic quarterly publication (*above*). NCI ran for three decades, inspiring generations of scientists and nature enthusiasts who went on to shape the landscape of conservation in India. Over the years, WWF-India re-strategised its education work and created six programmes to engage children, youth and citizens. Today, Mission Prakriti strives to embed environment education into government school curricula. It is supplemented by One Planet Academy, a digital platform with interactive educational resources. The Wild Wisdom Global Challenge puts students' knowledge of nature to the test with a fun and rewarding annual competition. Nature Connect offers a way back to nature for people of all ages through eco-trails, and People for Planet mobilises youth and citizens through volunteering opportunities and conservation action projects. WWF-India also publishes books on a variety of environmental themes in engaging formats—from comics to field guides.

Find Your Friends

In 1977, readers of this quarterly wanted to network with like-minded people but found it hard to make these connections. Today, all of us are constantly connected—and all you have to do to find your community is to visit the social-media pages of WWF-India. For those who prefer a physical gathering, there are our nature trails. And if you feel the itch to write us an old-school letter, drop your missive at *contact@wwfindia.net* with the subject *"Pen Pals Corner"*.

SIPPING ON SUSTAINABILITY

Women from Kanyakumari are making thousands of biodegradable straws from fallen coconut leaves every week, beating single-use plastic pollution and societal gender norms in one move.

By Ashley Wilkinson,
Senior Programme Officer—Youth & Citizen Engagement, WWF-India

The world is grappling with a growing crisis of plastic pollution. According to the United Nations Environment Programme (UNEP), humanity produces more than 430 million tonnes of plastic annually, two-thirds of which are short-lived products. UNEP further states that 46% of plastic waste goes into landfills while 22 per cent is mismanaged.[1] Mismanaged plastic waste pollutes air, water and soil. Regular plastic does not decompose; it breaks up into microplastics and nanoplastics that stay in the environment, affecting entire ecosystems and human health.

In India, despite a national ban imposed in July 2022[2], single-use plastics like plastic straws remain widely used due to their affordability and a lack of accessible alternatives. Addressing this challenge is crucial for India's environmental future. Bengaluru-based Sunbird Straws, a venture by Dr. Saji Varghese, offers a sustainable solution—biodegradable straws made from fallen coconut leaves. This model exemplifies how Nature-based Solutions (NbS) can effectively address one of the most pressing challenges of climate change, single-use plastic (SUP), while putting women at the forefront.

Recognising the significance of this, WWF-India collaborated with Sunbird Straws—under UNEP's Tide Turners Plastic Challenge (TTPC)—to champion women-led, environmentally conscious entrepreneurship in Kanyakumari, Tamil Nadu. The initiative aimed to not only address the issue of plastic pollution but also to build green livelihood skills among women from some of the most marginalised communities in the region.

The Tide Turners Plastic Challenge is the world's largest youth-led movement on plastic pollution. Since 2019, over 750,000 young people in India have joined TTPC, helping build awareness on plastic pollution and leading actions to promote sustainable alternatives to SUPs. In January 2025 under TTPC, WWF-India supported the establishment of a processing unit equipped with specialised tools and machinery to create high-quality raw material from coconut tree leaves. This initiative was locally supported by Sunbird Straws, which identified the location, supported with the training of young women in need of livelihood skilling and garnered community support in establishing a community-led processing unit.

This unit became the backbone of a 30-day intensive training programme that skilled over 22 women from nearby rural communities. The women were trained in the end-to-end straw production process—from segregating and storing palm leaves to midrib removal, cleaning, cutting, bundling and final assembly of biodegradable coconut-leaf straws. The training also included entrepreneurship development sessions, which covered subjects like business management, inventory tracking, financial literacy and sustainable production methods.

Today, the Kanyakumari women-led processing unit produces over 40,000 biodegradable straws each week. Sunbird Straws purchases the finished products directly from them, providing a stable income to the trained women. This structure not only ensures quality and market access but also creates consistent livelihood opportunities for the women involved. The straws are used in hotel chains, national and international conferences, institutes as well as local restaurants. The initiative has already replaced over 200,000 plastic straws, preventing more than 450 kilograms of CO_2 emissions.

Studies show that in many rural areas of India, young women remain excluded from vocational training, education and income-generating opportunities.[3] Social norms often discourage them from entering technical or manufacturing roles, resulting in economic dependency and limited social mobility. Beyond environmental impact, this initiative has ignited a powerful social transformation. The women, once confined to domestic roles, are now technical operators, income earners and environment conservation stewards. They are taking ownership of the production process, mentoring others in their communities while promoting sustainable alternatives to SUPs. In fact, WWF-India has enabled over 200 women across five villages with green livelihood skills, promoting sustainable alternatives to SUP products, through TTPC. Through initiatives like this, India is shifting towards a green economy—one that is inclusive, equitable and built on the active contributions of all, paving the way for a more sustainable future.

WWF-India led a 30-day intensive training programme that skilled over 22 women in the process of producing straws from coconut leaves.

From top: The Kanyakumari women-led processing unit produces over 40,000 biodegradable straws each week; these women are now encouraging their peers to join the unit.

Lakshmi, one of the training beneficiaries in Kanyakumari, says, "We never imagined we could earn by helping the environment. We are not just supporting our families but also protecting our land and water from plastic." Now, these women are encouraging their peers to join the unit, creating a ripple effect across villages. As they gain financial independence and community recognition, the women are challenging gender norms and proving that green entrepreneurship can be both inclusive and transformative. ◆

References:

1. 2023. Everything You Need To Know About Plastic Pollution. unep.org
2. Ban on identified Single Use Plastic Items from 1st July 2022. Press Information Bureau, Govt of India, MoEFCC.
3. Aditi Ratho. 2023. Promoting female participation in urban India's labour force. Observer Research Foundation.

SMALL CATS, BIG MYSTERIES

A camera-trap image of a caracal in Mukundra has brought into sharp focus the small cats of India and the paucity of information about them.

By Dr. Ridhima Solanki,
Coordinator—Public Sector Partnerships and Small Cats, WWF-India

When Mukundra Hills Tiger Reserve reported a camera-trap photograph of a caracal in March 2025, a celebration erupted in India's westernmost arid-zone tiger habitat. The presence of the species has long been established in the state, but the image confirmed its current range—an important first step in the active management of any carnivore.

According to Dharmendra Khandel's book, *Caracal – An Intimate History of a Mysterious Cat*, the historical distribution of the caracal spanned 14 states but is now limited to three. Understanding the sharp decline in this habitat, Rajasthan and Gujarat have taken the onus of the small cat's conservation. The caracal is included in the Critically Endangered Species Recovery Programme under the Integrated Development of Wildlife Habitats (IDWH), a Centrally sponsored scheme for the conservation of wildlife and habitats. The reintroduction of the cheetah has also brought fresh focus on grassland habitats, which are important for the caracal too.

India is a global leader in conserving big cats. While we can proudly claim to be home to the highest number of wild tigers in the world and the only viable wild population of the Asiatic lion, counting caracals and other small cats has been a challenge. They lack the glamour of their bigger cousins but small cats have shown great adaptation to coexist alongside human settlements by preying on rodents, birds and reptiles. Each of the 11 small cat species found in India is unique in its habitat and behaviours, yet they are all elusive. Their identification is a challenge even for researchers, with little information available on species pugmarks and scat.

Just like the caracal of Mukundra, small cats are usually photographed by wildlife enthusiasts or snapped in camera traps set up for tigers or mammal assemblage. Such fortuitous captures help in charting their geographical range as long as one can identify the cat. Some of them are easier to recognise than others. The rusty spotted cat is a tiny feline with four dark lines running over its eyes and nape. It is native to India, Nepal and Sri Lanka and can exist easily near humans, using tree trunks to survive. These cats are so small—900 grams to 1.6 kilograms in weight—that they can be killed by domestic dogs, and thanks to their rusty spots, they are confused for leopard pups and persecuted. The slightly bigger marbled cat can be easily identified by its marble-like fur pattern. Its distribution is limited to the northeastern states of India, where it faces a shrinking habitat due to land-use change. Meanwhile, the Asiatic wildcat, or Indian desert cat, occupies arid and semi-arid areas of western India and utilises the abandoned dens of foxes and other carnivores. But it faces the problem of hybridisation with domestic cats and also ends up as roadkill.

The fishing cat got its name from its primary prey and hunting behaviour. Found mainly in the mangrove forests of the Sundarbans, on the foothills of the Himalayas along the Ganga and Brahmaputra valleys and in the Western Ghats, the fishing cat diverges from other felines in its adept navigation of water. When it's not diving into water bodies with its webbed feet, this cat steals catch from fishers' nets—and sometimes get entangled as a result.

Surviving in high-altitude snowy habitats is not easy, but two small cats do it effortlessly. Thick fur lines the paws of the Himalayan lynx and the short ears of the Pallas's cat. The former roams the high-altitude forests and alpine meadows of northern India and the latter thrives in the cold deserts of the trans-Himalayan region of India. Here too, human development and free-ranging dogs are eating into their habitats. These cats camouflage with the snow and hunt small ungulates and pika, avoiding direct contact with humans and offering few sightings.

When we talk about camouflage, the broadleaf forests of northeastern India are tricky places to be. This is where the clouded leopard and the leopard cat excel in hiding from animals and humans alike. While any sighting of the clouded leopard is rare, the leopard cat has adapted to survive near human habitations. The Asiatic golden cat may not have the distinct fur pattern of the other two cats in the region but it has six different morphs. A survey in Bhutan revealed that the Asiatic golden cat can be golden, cinnamon, grey, melanistic, roseate and ocelot. Like its co-occurring species, this cat is also fast losing its habitat to plantations like those of palm oil, rubber and coffee.

The conservation of small cats has a major limitation in the database we possess. Species conservation plans can be developed only once we understand each cat's habitat requirements and its interaction with that space. With a paucity of such information, most of the small cats are often discussed in groups. Identifying common threats and challenges can contribute in conserving small-cat habitat until species-specific information becomes available. Since the cats' habitats overlap with land used by humans, engaging the community for the conservation of these species is essential. Agriculture, plantations and domestic dogs impact small-cat populations and habitats indirectly while poaching and illegal wildlife trade directly target them.

In order to develop a conservation strategy for small cats, a national-level database is a significant first step. It will also help in building community awareness about the existence of small cats in diverse habitats so that all sightings of small cats are not grouped together under a casual colloquial term like "*jungli billi*". After all, not every small wild cat sighting can be chalked down to the jungle cat, the 11th small cat of India that has a wide distribution but isn't as commonplace as its name. ◆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From top: Caracal and clouded leopard.


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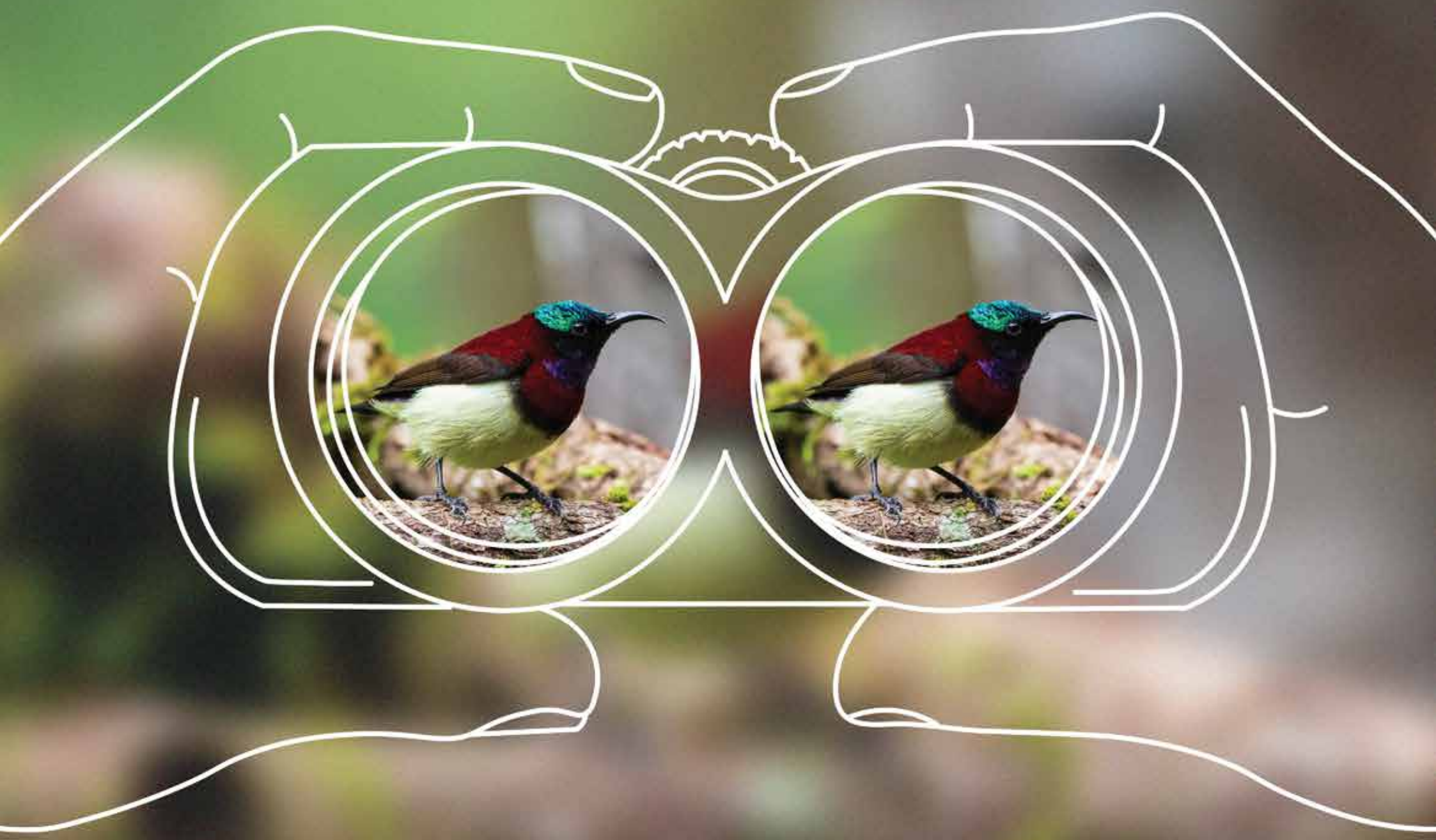
Clockwise: Fishing cat; rusty spotted cat; leopard cat; Pallas's cat; and jungle cat.

Spot the Species

30 Endemic Bird Species of India and Where to Find Them



Bird Guide Inside

Image Sources: *Shutterstock.com, inaturalist.org, ebird.org and Dhritiman Mukherjee*

30 Endemic Bird Species of India

White-naped Tit
Range: Parts of Gujarat, Rajasthan, Andhra Pradesh, Karnataka and Tamil Nadu

Sykes's Lark
Range: Rajasthan, Gujarat, Madhya Pradesh as well as the Western Ghats

Malabar Lark
Range: Western Ghats and hills of southeast Gujarat

Malabar Grey Hornbill
Range: Western Ghats of Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu

White-bellied Treepie
Range: Western Ghats, specifically south Goa, parts of Karnataka, Kerala and Tamil Nadu

Painted Bush Quail
Range: High-altitude grasslands of the Western Ghats

Malabar Whistling Thrush
Range: Forests of Western Ghats and parts of Telangana, Chhattisgarh, Andhra Pradesh, Karnataka and Tamil Nadu

Malabar Parakeet
Range: Western Ghats

Crimson-backed Sunbird
Range: Western Ghats

Broad-tailed Grassbird
Range: Western Ghats, mostly in Kerala and parts of Tamil Nadu

Black-and-orange Flycatcher
Range: Forests of the Western Ghats in Karnataka, Kerala and Tamil Nadu

Nilgiri Sholakili
Range: High-altitude mountains of the Nilgiris and Kodagu

Nilgiri Laughingthrush
Range: Nilgiri mountains of Kerala and Tamil Nadu

Nilgiri Wood Pigeon
Range: Forests of the Western Ghats and parts of the Eastern Ghats

Jerdon's Courser
Range: Parts of Andhra Pradesh

Yellow-throated Bulbul
Range: Telangana, Karnataka, Andhra Pradesh, Tamil Nadu and Kerala

Red Spurfowl
Range: Forests of Central and Peninsular India

Grey Junglefowl
Range: Peninsular India

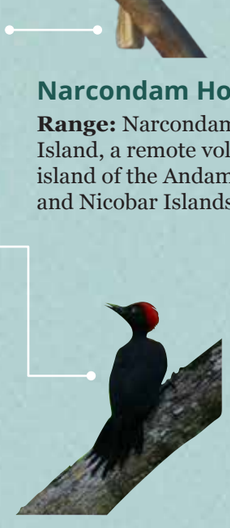
Mottled Wood Owl
Range: Peninsular India, Central India and the Terai forests

White-headed Starling
Range: Andaman and Nicobar Islands

Andaman Hawk-Owl
Range: Andaman Islands

Narcondam Hornbill
Range: Narcondam Island, a remote volcanic island of the Andaman and Nicobar Islands

Andaman Crake
Range: Andaman and Nicobar Islands



Andaman Woodpecker
Range: Mangroves and evergreen forests of Andaman Islands

Nicobar Megapode
Range: Nicobar Islands

Nicobar Serpent Eagle
Range: Nicobar Islands

Forest Owlet
Range: Forests of Rajasthan, Maharashtra and Madhya Pradesh

Other Endemic Birds of India: **Andaman and Nicobar Islands:** Andaman Cuckoo Dove, Andaman Scops Owl, Andaman Serpent Eagle, Andaman Treepie, Andaman Wood Pigeon, Nicobar Sparrowhawk, Nicobar Bulbul, Nicobar Parakeet; **Western Ghats:** Grey-headed Bulbul, Nilgiri Flycatcher, White-bellied Blue Flycatcher, Rufous Babbler, Rock Bush Quail, White-cheeked Barbet; **Kerala:** Nilgiri Pipit; **Uttarakhand:** Himalayan Quail; **Manipur:** Manipur Bush Quail; **Peninsular India:** Painted Spurfowl

FUN FACTS:

1. The Common Peacock Butterfly is Uttarakhand's state butterfly!
2. The Dipper is the only songbird that is capable of swimming and diving!
3. Like other kingfishers, Crested Kingfishers can often be seen battering their prey on a rock before eating it. These birds eat up to their body weight's worth of fish every day!
4. The Tons river is the largest tributary of the Yamuna, which it meets near Dehradun, the capital of Uttarakhand.

Q. Another species of kingfisher that is coloured black-and-white quite like the Crested Kingfisher, is widespread across India, and is renowned for its hovering dives. Can you name this species?

MARINE MAZE

Help the turtle find its way to food through a sea of plastics.

WORD SCRAMBLE

Rearrange the jumbled letters to reveal the species.

BULKKCCAB _____

LGANNOIP _____

LRIIIGN RHTA _____ _____

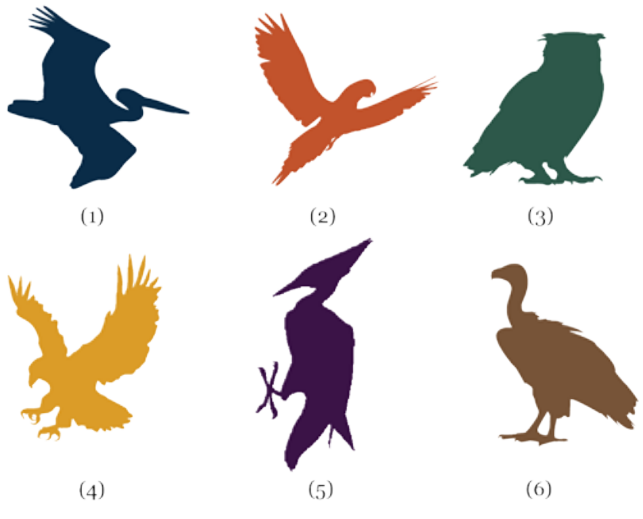
GNARLU _____

CORHEROSNI _____ _____

Answers: 1. Blackbuck 2. Pangolin 3. Nilgiri Tahr 4. Langur 5. Rhinoceros

GUESS THE BIRD

Identify the birds using the hints below.



1) This bird cools itself by flapping its gular pouch rapidly, allowing moisture to evaporate.
2) This group of birds is known for species with vibrant colours and an ability to mimic sounds, including human speech.
3) This bird swallows its prey whole and later regurgitates the indigestible parts like bones and fur in the form of pellets.
4) This bird of prey uses thermal air currents to glide effortlessly and soar to great heights.
5) This bird drills into trees with its chisel-like beak, creating nest cavities that are used by other animals.
6) This bird has a highly acidic stomach, with pH close to that of battery acid.

Answers: 1. Pelican 2. Parrot 3. Owl 4. Eagle 5. Woodpecker 6. Vulture

FIELD JOURNAL

Observations of the Dancing Frog

The Kottigehar dancing frog is an EDGE* species. It is one of 24 species of dancing frogs, all endemic to the Western Ghats. Dependent on perennial, primary streams within semi-evergreen and evergreen forests, the entire genus is the most threatened genera in the Indomalaya realm.[1]

1
The male calls from a wet rock near fast flowing rapids. Its white vocal sac expands fully, flashing with each call to attract a female and signal its presence to other males.

2
But the environment is loud, so the calls don't get very far. The male taps its feet and extends its hind legs, one at a time. This quirky signal is called 'foot flagging'.

3
The other males in the area take notice and approach the contender. Males can get competitive, calling out and kicking one another constantly for up to an hour—until all but one decide to give up.

4
The much larger female observes this competition unfold from a distance and eventually mates with the winner, which mounts her. She digs a hole in the stream bed and lays about a hundred eggs that are fertilised by the male.

5
Unlike other tadpoles, which are aquatic, those of the dancing frog are fossorial. This means that they spend their early life under a layer of sand and gravel of stream beds.

Illustration: Neha Upadhyay

*Evolutionarily Distinct and Globally Endangered

1. Global Amphibian Assessment 2023 (GAA2)

WWF-India is one of India's leading conservation organizations with programmes and projects spread across the country. The organization works towards the conservation of biodiversity and natural habitats and the reduction of humanity's ecological footprint. The mission of WWF-India is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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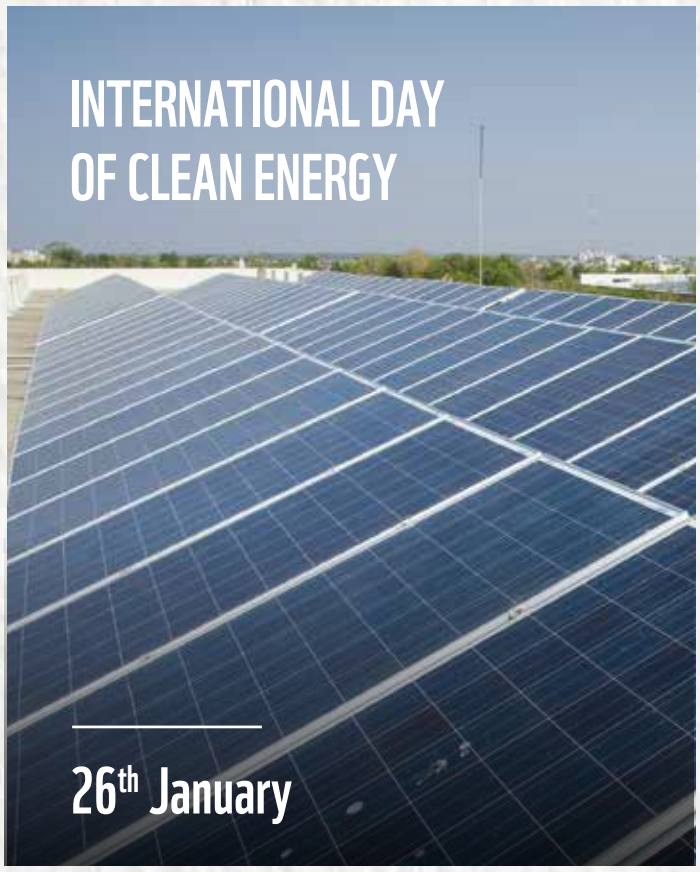

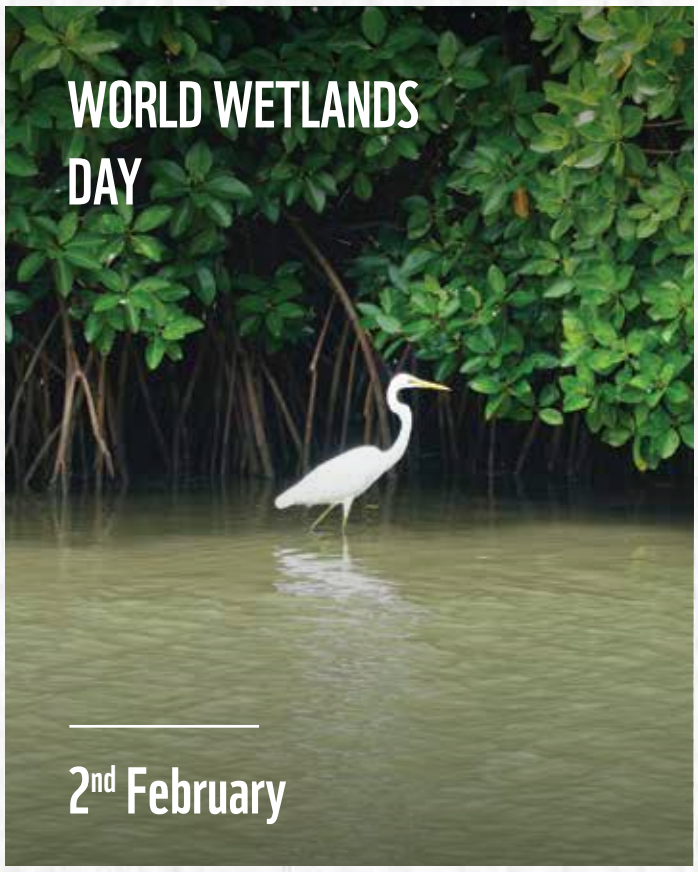

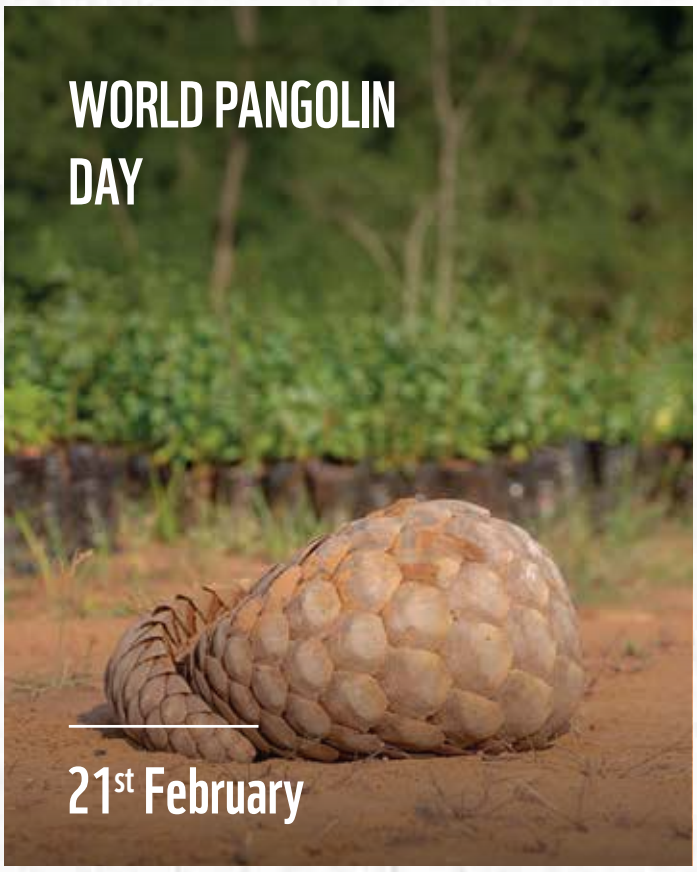

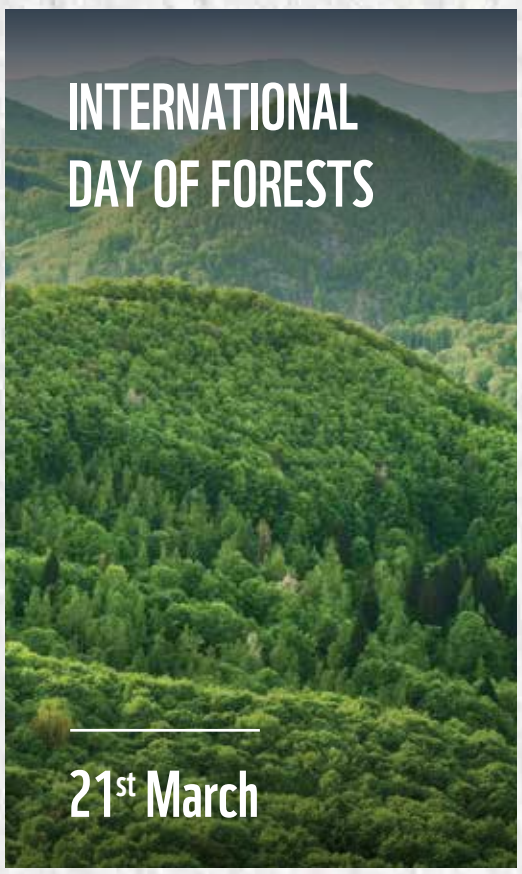

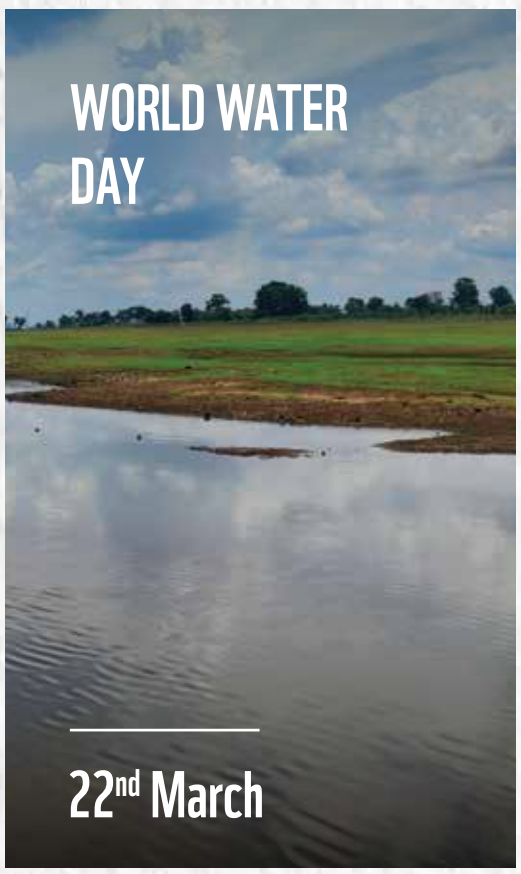

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